PCV53

A PHARMACOECONOMIC ANALYSIS OF PROPHYLAXIS THERAPIES AND TREATMENT OF VENOUS THROMBOEMBOLISM (VTE) IN MEXICAN PATIENTS WITH CANCER

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OBJECTIVES: An adverse consequence of cancer is venous thromboembolism(VTE), manifesting as either deep vein thrombosis(DVT) or pulmonary embolism(PE). Compared with non-cancer patients, the incidence of VTE has been increasing in cancer patients over the past ten years and the risk of recurrent DVT and subsequent PE remains elevated. The aim of this study was to assess the cost-effectiveness of anticoagulant therapies to prevent VTE in Mexican patients with cancer from the payer's perspective. **METHODS:** A six-state Markov model was performed to estimate health and economic consequences during a time horizon of one year (1-week cycles). Effectiveness measures were reduction in recurrent hospitalizations, reduced PE and DVT events; and avoidance of deaths. Markov transition probabilities were obtained from a meta-analysis employing international published literature. Comparators employed were warfarin(5 mg/day); dalteparin(2500,5000,7500 IU/day); enoxaparin(20,40,60 mg/day); nadroparin(5700 IU/day); unfractionated heparin plus warfarin(10000,30000,42000 IU/day+5 mg/day); acenocoumarol(4 mg/day); and no prophylaxis intervention. Resource use and costs were collected from clinical records (n = 7000) from Social Security Mexican Institute (IMSS) hospitals and official institutional databases. The model was validated. Bootstrapping techniques were used to develop probabilistic sensitivity analyses. Acceptability curves were constructed. **RESULTS:** Incidence of PE and DVT were significant lower for patients treated with dalteparin($p < 0.05$). Regarding the reduction of DVT events, dalteparin 2500, 5000 and 7000 IU/day showed an Incremental cost-effectiveness ratio[CI95%] of US$45.81[US$44.9–US$46.8]; US$40.9[US$40.0–US$41.7] and US$37.8[US$37.0–US$38.5] against warfarin (gold-standard), respectively. Nevertheless, enoxaparin in all its presentations and no prophylaxis intervention alternatives were dominated by dalteparin. Dalteparin showed the lowest number of deaths and hospitalization re-admissions(for DVT and PE) when compared to other anticoagulant therapies ($p < 0.05$) and showed a trend toward significant reduction of institutional costs in the short term. Second-order Monte Carlo sensitivity analyses showed the robustness of these results (ellipse-method). **CONCLUSIONS:** Dalteparin demonstrated to be a cost-effective anticoagulant therapy to reduce incidence of PE and DVT events, deaths and recurrent hospitalizations in patients with cancer.

PCV54

COST-EFFECTIVENESS OF DABIGATRAN ETEXILATE 150 MG FOR THE PREVENTION OF VENOUS THROMBOEMBOLISM IN PATIENTS AGED OVER 75 YEARS UNDERGOING TOTAL HIP OR KNEE ARTHROPLASTY

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OBJECTIVES: Dabigatran etexilate (DBG) is a new direct thrombin inhibitor which is administered orally at a fixed dose. EMEA has approved DBG at a standard dose of 220 mg once daily (od), and at a lower dose of 150 mg od for patients aged over 75. Recent economic analyses for the UK have demonstrated that DBG 220 mg od is cost-saving when compared with the commonly used agent, enoxaparin 40 mg od, with comparable efficacy and safety. This analysis investigates the cost-effectiveness of DBG 150 mg od for the prevention of venous thromboembolism (VTE) in the subset of patients aged over 75 undergoing total hip arthroplasty (THA) or total knee arthroplasty (TKA) from the perspective of the UK National Health Service. **METHODS:** There was a comparison of DBG 150 mg od to enoxaparin 40 mg od using a decision model. Relative risks for VTE and bleeding events specific to patients aged over 75 were derived from sub-group analyses of the phase III DBG trials, RE-MODEL and RE-NOVATE. Probabilities of recurrent VTE and post-thrombotic syndrome were estimated from published longitudinal studies. **RESULTS:** DBG was less costly than enoxaparin in TKR and substantially less so in THR, primarily due to differences in administration costs. VTE and bleeding rates were similar for DBG and enoxaparin; the probability of cost-effectiveness was 89% in TKR and 99% in THR at a willingness-to-pay threshold of ≤20,000 per quality-adjusted life-year. These results were robust across a range of sensitivity analyses. **CONCLUSIONS:** Thromboprophylaxis with DBG 150 mg od in patients aged over 75 years is cost saving compared to enoxaparin 40 mg od, with comparable efficacy and safety.

PCV55

COST-EFFECTIVENESS OF VALSARTAN IN JAPAN: RESULTS FROM THE JIKEI HEART STUDY

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OBJECTIVES: The Jikei Heart Study (n = 3081) demonstrated that the angiotensin II receptor blocker (ARB) valsartan significantly reduced the incidence of the primary composite endpoint in Japanese patients previously receiving standard non-ARB therapy. The primary end point was a composite of CV morbidity/mortality including stroke or transient ischemic attack, hospitalization for heart failure or angina, dissecting aneurysm of the aorta, lower-limb arterial obstruction, doubling of serum creatinine, and transition to dialysis. The purpose of this study was to determine whether valsartan is cost-effective based on data from the Jikei Heart Study. **METHODS:** A probabilistic model assessed the cost-effectiveness of valsartan vs. standard therapy in a Japanese patient population. Cost-effectiveness analyses incorporated life-years gained and quality-adjusted-life-years gained to adjust for impairment of quality-of-life. Conservative "cost accounting" of the Jikei Heart Study was employed to validate model results—direct medical costs associated with in- and out-patient treatment of patients. A probabilistic sensitivity analysis assessed the robustness of the results. **RESULTS:** Expected total costs for the non-ARB arm were ¥365,961 per patient for three years compared to ¥365,151 per patient for three years for valsartan—a cost-savings of ¥270 per patient per year. Valsartan would also extend quality adjusted life years (QALY) by 0.09 over non-ARB treatment in the 3-year time horizon. The cost savings and increased QALYs lead to a –¥85,215 per QALY gained, a dominant strategy. Probabilistic sensitivity analyses demonstrated robustness of the economic evaluation. **CONCLUSIONS:** Valsartan is cost-effective in Japanese patients with high blood pressure, coronary heart disease and/or heart failure, who previously received standard care. Including costs associated with National Health Insurance sickness allowance for extended disability, valsartan is both more effective and less costly than non-ARB treatment.

PCV56

COST-EFFECTIVENESS OF DABIGATRAN ETEXILATE 150 MG FOR THE PREVENTION OF VENOUS THROMBOEMBOLISM IN PATIENTS UNDERGOING TOTAL HIP OR KNEE ARTHROPLASTY THAT HAVE MODERATE IMPAIRMENT OF RENAL FUNCTION

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OBJECTIVES: Dabigatran etexilate (DBG) is a new direct thrombin inhibitor which is administered orally at a fixed dose. Patients with renal impairment are thought to be at higher risk of bleeding during thromboprophylaxis, and lower doses are recommended in this population. EMEA has approved DBG at a standard dose of 220 mg once daily (od), and at a lower dose of 150 mg od for patients with moderate renal impairment. Recent economic analyses for the UK have demonstrated that DBG 220 mg od is cost-saving when compared with the commonly used agent, enoxaparin 40 mg od, with comparable efficacy and safety. This analysis investigates the cost-effectiveness of DBG 150 mg od for the prevention of venous thromboembolism (VTE) in patients with moderate renal impairment undergoing total hip arthroplasty (THA) or total knee arthroplasty (TKA) from the perspective of the UK National Health Service. **METHODS:** DBG 150 mg od was compared to enoxaparin 40 mg od using a decision model. Relative risks for VTE and bleed events specific to patients with moderate renal impairment (creatinine clearance ≥30 and <50 mL/min) were derived from sub-group analyses of the phase III DBG trials, RE-MODEL and RE-NOVATE. Probabilities of recurrent VTE and post-thrombotic syndrome were estimated from published longitudinal studies. **RESULTS:** DBG was less costly than enoxaparin in TKR and substantially less so in THR, primarily due to differences in administration costs. VTE and bleeding rates were similar for DBG and enoxaparin; the probability of cost-effectiveness was 75% in TKR and 97% in THR at a willingness-to-pay threshold of £20,000 per quality-adjusted life-year. These results were robust across a range of sensitivity analyses. **CONCLUSIONS:** Thromboprophylaxis with DBG 150 mg od in patients with moderate renal impairment is cost saving compared to enoxaparin 40 mg od, with comparable efficacy and safety.

PCV57

HEALTH ECONOMIC EVALUATION OF CONTRAST MEDIA IN CORONAROGRAPHY: ISO-OSMOLAR IODIXANOL VS. LOW-OSMOLAR MEDIA

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OBJECTIVES: To perform health economic evaluation of iso-osmolar Iodixanol vs. low-osmolar contrast media in patients undergoing coronarography. **METHODS:** The decision tree modeling was performed using literature data on dosage, efficacy and safety. Iopromide as one of the commonly used low-osmolar contrast in Russia was chosen for comparison. Efficacy of Iodixanol and Iopromide was equal, so only safety issues were taken into consideration. Costs of procedure including side effects management were calculated using experts interview in Moscow clinics and hospital cost estimates. Cost-minimization analysis (CMA) from health care system perspective was performed. **RESULTS:** According to McCullough PA, et al. (2006) the rate of contrast-induced nephropathy (CIN) was 1.4% for Iodixanol and 3.5% for Iopromide in common population, 2.8% and 8.4% in patients with chronic kidney disease (CKD), and 3.5% and 15.5% in patients with diabetes mellitus combined with CKD. Rihal CS and colleagues (2002) showed that CIN patients required haemodialysis in 7.9%. They demonstrated 22% mortality compared to 1.4% of patients with normal renal function. Hypotension rate was 20.1% and 9.1%, acute heart failure was 11.4% and 3.1%, cardiac arrest was 11.4% and 1.5%, respiratory distress-syndrome was 9.4% and 0.7%, and myocardial infarction was 3.9% and 0.9% respectively.

The cost savings following the use of Iodixanol compared to Iopromide in coronarography averaged 2287 RUB (72 USD) in common population, 2866 RUB (USD91) in patients with CKD, and 3427 RUB (US$109) in patients with diabetes mellitus and CKD. **CONCLUSIONS:** The results of this study demonstrated Iodixanol to be cost-saving compared to low-osmolar contrast media both in risk groups and in general population.

PCV58

TRIAL-BASED ECONOMIC EVALUATION ALONGSIDE THE TCYB (TAKE CONTROL OF YOUR BLOOD PRESSURE) TRIAL

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OBJECTIVES: The Take Control of Your Blood Pressure trial randomized 636 community-dwelling individuals with hypertension to evaluate the impact of a telephonic behavioral self-management intervention, home blood pressure monitoring, and both interventions combined compared to usual care on reducing systolic blood pressure (SBP) over 24 months. At 24 months, the combined intervention demonstrated a significant 3.9 mmHg (95%CI: 0.9,6.9) reduction in SBP relative to usual care. Patients randomized to home BP monitoring or the behavioral intervention had less improvement (0.6 mmHg and –0.6 mmHg, respectively). A prospective economic evaluation was performed. **METHODS:** Measures of medical resource use costs were derived from electronic data representing medical care delivered within the Duke University Health System. Intervention-related costs, including patient time, were estimated using patient-level data collected during the trial, administrative records, and published unit costs. Sensitivity analyses were conducted to evaluate the impact of changing assumptions about overhead costs and time between completed phone encounters when estimating costs associated with the behavioral intervention. **RESULTS:** On average, over 24 months, patients incurred $6,965 (SD = 22,054) in inpatient costs and $8,676 (SD = 9,368) in outpatient costs, with no significant differences across intervention groups. When applying base-case assumptions, 24-month intervention costs were estimated to be $90 (SD = 2) for home blood pressure monitoring, $345 (SD = 64) for the behavioral intervention ($31 per phone encounter) and $416 (SD = 93) for the combined intervention. In sensitivity analyses, the cost for each phone encounter ranged from approximately $10 to $45. Patient time costs were estimated at $585 (SD = 487) for home monitoring, $55 (SD = 16) for the behavioral intervention and $741 (SD = 529) for the combined intervention. **CONCLUSIONS:** Home blood pressure monitoring and/or the behavioral intervention had little impact on medical resource use or costs over 2 years. Our analysis demonstrated that these interventions are cost-additive to the health care system and that patients' time costs are considerable.

PCV59

ECONOMIC ANALYSIS OF THE ENDEAVOR DRUG-ELUTING STENT VS. THE DRIVER BARE METAL STENT: RESULTS FROM THE ENDEAVOR II TRIAL

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OBJECTIVES: To assessed the economic attractiveness of the Endeavor drug-eluting stent (DES) vs. the Driver bare metal stent (BMS) using 4-year follow-up information from the ENDEAVOR II clinical trial. **METHODS:** We used clinical, index procedure and follow-up events data from subjects randomized to receive Endeavor (n = 598) vs. Driver (n = 599), and applied Medicare cost and quality of life adjustments from secondary sources. We compared differences in clinical endpoints, medical costs, and quality adjusted survival through 4 years follow-up (1440 days). **RESULTS:** Patients in both treatment groups had similar baseline characteristics. The use of Endeavor vs. Driver reduced 4-year target vessel revascularization (TVR) rates per 100 subjects (10.4 vs. 21.5; difference, –11.1; 95% confidence interval [CI], –16.0 to –6.1; p < .001), with no difference in the rates per 100 subjects of death (5.0 vs. 5.2; difference, –.2; 95% CI, –2.4 to 2.7; p = .90) or non-fatal myocardial infarction (MI) (3.2 vs. 4.4; difference, –1.2; 95% CI, –3.4 to 1.0; p = .29). After discounting at a 3% annual rate, there were no differences in quality-adjusted survival days (1093 vs. 1090; difference, 3; 95% CI, –13 to 19; p = .69) and total medical costs ($21,483 vs. $21,680; difference, –$198; 95% CI, –$1608 to $1207, p = .78). **CONCLUSIONS:** The use of Endeavor vs. Driver was associated with a significant reduction in TVR through four years follow-up with no difference in death, non-fatal MI, quality-adjusted survival, or total medical costs. These results are comparable to those for other studies comparing DES vs. BMS.

PCV60

ECONOMIC ANALYSIS OF ENDEAVOR VS. CYPHER STENTS: RESULTS FROM THE ENDEAVOR III TRIAL

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OBJECTIVES: To evaluate the economic attractiveness of Endeavor vs. Cypher drug-eluting stents (DES) in the ENDEAVOR III clinical trial. **METHODS:** We analyzed case report form information from subjects randomized to receive Endeavor (n = 323) vs. Cypher (n = 113) stents, using quality of life adjustment and Medicare cost weights applied from secondary sources, and a $2100 cost for stents. We compared differences in outcomes and costs; and evaluated cost-effectiveness through 3-years follow-up (1080 days). **RESULTS:** The use of Endeavor vs. Cypher stents reduced the 3-year rates per 100 subjects of death or myocardial infarction (MI) (3.9 vs. 10.8; difference, –6.9; 95% confidence interval [CI], –0.8 to –9.9; p = .028), with no difference in target vessel revascularization rates (17.9 vs. 12.2; difference, 5.7; 95% CI, –3.9 to 15.1; p = .23), but greater use of coronary artery bypass graft surgery (3.5 vs. 0.0; difference 3.5; 95% CI, 1.3 to 5.7; p = .002). After discounting at 3% per annum, total medical costs for Endeavor vs. Cypher were similar ($23,353 vs. $21,657; difference, $1696; 95% CI, –$1089 to $4482, p = .23), and the 3-year cost-effectiveness ratio was $57,002 per quality-adjusted life year. **CONCLUSIONS:** Use of Endeavor vs. Cypher led to reductions in death or MI, with no differences in other outcomes. These findings are unexpected in DES comparisons. If future trials observe similar differences, the use of Endeavor vs. Cypher will be economically attractive by conventional standards.

PCV61

MEDICAL EXPENDITURES ATTRIBUTABLE TO CORONARY ARTERY DISEASE IN THE UNITED STATES

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OBJECTIVES: This study estimated medical expenditures attributable to coronary artery disease (CAD) in the US and investigated CAD case definition in a nationally representative sample. **METHODS:** Data from 2005 from the nationally representative Medical Expenditure Panel Survey (MEPS) were used to estimate the population with CAD and their medical expenditures. CAD cases were identified by patient-reported myocardial infarction (MI), angina pectoris and/or coronary heart disease (CHD). Case definition analysis used multivariable logistic regression. Person-level and national expenditures were estimated on a logarithmic scale using a maximum likelihood Heckman selection model and Smearing re-transformation. All analyses employed Taylor series linearization methods to account for the complex survey design and adjusted for age, race, ethnicity, gender, income, education, and overweight status. **RESULTS:** In the 2005 civilian noninstitutionalized adult population (n = 22262), there were 1016 CAD cases using a strict definition of either MI or angina and 1266 cases using a broad definition including patient-reported CHD. Of those reporting CHD (n = 702), only 65% (n = 458) had MI or angina . Females and blacks reporting CHD were less likely to have MI or angina (OR = 0.52, 0.39, p < 0.01). Annual direct medical expenditures attributable to strictly defined CAD were estimated to be $6456 ($2007), on average, per person. Expenditures for broadly defined CAD were $6453 ($2007). Based on this estimate and the weighted estimate of persons with CAD (approximately 9.8 million), the projected annual US medical expenditures attributable to CAD are $63 billion ($2007). **CONCLUSIONS:** While CAD and CHD are generally diagnosed by either MI or angina, patient-reported CHD is not consistent with this definition. Consistency appears to vary with gender and race. While the CAD case definition varies, expenditures do not. Results of this study indicate that direct medical expenditures associated with CAD in the US are substantial.

PCV62

IDENTIFYING DRIVERS OF POST-HOSPITAL DISCHARGE FOR PATIENTS WITH ACUTE CORONARY SYNDROME (ACS) USING QUANTILE REGRESSIONS

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OBJECTIVES: To identify drivers of post-hospital costs among ACS patients, including treatment type received. Patients who are hospitalized with ACS have different treatment options, including revascularization procedures. While these procedures are expensive, there might be offsets in future health care costs by preventing adverse coronary events. **METHODS:** We studied commercially insured individuals, aged 18–64, with 36 months continuous enrollment in a large, geographically diverse health plan between January 2003 and December 2006. Patients were identified if they were hospitalized between January 1, 2004 and December 31, 2005 with a diagnosis of ACS. A 1 year follow-up period was used and costs incurred after patients' initial hospital discharge were examined. In addition to ordinary least squares (OLS),, quantile-regression models (QRM) were used to identify drivers of post-hospital costs. QRM make no assumption about the distribution of the error term and provide quantile-specific covariate effects, which is useful in applications with highly skewed data. **RESULTS:** OLS results indicated co-morbidity scores, prior health care costs and initial hospital diagnosis were main drivers of post-hospital discharge costs (p < 0.01). Also, revascularization procedures during the initial hospitalization were not significantly associated with post-hospital costs. QRM confirmed the other findings but showed, at the lower end of the post-hospital costs distribution, having revascularization procedures during the initial hospitalization was significantly associated with higher post-hospital costs. This effect was not significant in the upper quantiles. **CONCLUSIONS:** In this study, initial hospital diagnosis, higher co-morbidity scores and prior health care costs were associated with higher post-hospital costs. Also, QRM showed revascularization procedures were drivers of cost for patients with lower post-hospital expenditures. This is an intuitive finding considering patients who have revascularization procedures may have more follow-up care compared to those without revascularization. However, these patients may have fewer secondary events requiring hospitalization, thus keeping them in the lower cost quantiles.